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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
MAIS, MARK A	

ART UNIT	PAPER NUMBER
2664	

DATE MAILED: 04/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/834,877	ZHENG ET AL.	
	Examiner	Art Unit	
	Mark A Mais	2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 March 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-53* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13,18-47 and 50-53* is/are rejected.

7)☒ Claim(s) *14-17,48 and 49* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 August 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4/16/01; 1/14/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statements (IDS) submitted on April 16, 2001 was filed together with the Application on April 16, 2001 and the IDS submitted on January 14, 2003 was submitted after the mailing date of the Application. The submissions are in compliance with the provisions of 37 CFR 1.56 and 1.97. Accordingly, the examiner considered the information disclosure statements.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-3, 4-6, 9-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Watanuki et al (USP 6,172,986).

4. With respect to claims 1-10, 18-19, 21-25, 27-29, 32, and 34-35 Watanuki et al. discloses a method for routing of mobile node packets, a method for mobile node handoff, a mobile node router, comprising:

moving a mobile node **[Fig. 1, IPv4/v6 mobile node 106, col. 11, line 27]** from a first location to a second location **[abstract]**, the second location being outside a home address of the

mobile node **[abstract; examiner interprets a location outside of the home address as inherent because it (the message) contains both the home and foreign addresses]**;

sending a configuration message **[movement transmission request message, col. 11, lines 27-30]** from a mobile node **[Fig. 1, IPv4/v6 node 106, col. 11, line 27]** along a path to a second node **[Fig. 1, IPv6 mobile node 104]**;

sending a confirmation message **[Fig. 6, step 64, movement registration permission message]** from the second node **[Fig. 1, IPv6 mobile node 104]** along the path to the mobile node **[Fig. 1, IPv4/v6 mobile node 106, col. 11, line 27]**, the confirmation message reserving resources **[resources are defined as at least the packet length difference between IPv4 packets and IPv6 packets, and, a header is added to the header containing the home and foreign addresses, abstract; see also figs. 13-17]** in nodes **[Fig. 1, IPv4 mobile agent 105, IPv6 mobile agent 107, and IPv4 mobile agent 108]** in the path for a flow from the mobile node **[Fig. 1, IPv4/v6 node 106, col. 11, line 27]**;

sending the flow **[interpreted by the examiner as IPv4 packet flow]** containing at least one packet from the mobile node **[Fig. 1, IPv4/v6 mobile node 106, col. 11, line 27]** to the second node **[Fig. 1, IPv6 node, 104]** along the path,

classifying **[Ipv4 or IPv6 packet]** the flow **[interpreted by the examiner as IPv4 packet flow]** by each node **[Fig. 1, IPv4 mobile agent 105, IPv6 mobile agent 107, and IPv4 mobile agent 108]** in the path based on a home address option **[each packet, regardless of whether it is IPv4 or IPv6, contains the home address, see Figs. 14-17]** in each at least one packet **[Fig. 6, IPv4 movement registration processing, 60; *see also* col. 13, line 21 to col. 14, line 50]** and

routing the flow **[interpreted by the examiner as IPv4 packet flow]** by each node **[Fig. 1, IPv4 mobile agent 105, IPv6 mobile agent 107, and IPv4 mobile agent 108]** in the path, each node **[Fig. 1, IPv4 mobile agent 105, IPv6 mobile agent 107, and IPv4 mobile agent 108]** in the path using the reserved resources **[resources are defined as at least the packet length difference between IPv4 packets and IPv6 packets, and, a header is added to the header containing the home and foreign addresses, abstract; see also figs. 13-17]** associated with the flow **[interpreted by the examiner as IPv4 packet flow]** based on the classification **[Ipv4 or IPv6 packet]**.

5. With regard to claims 36-39, Watanuki et al. discloses a method for efficient handoff of a mobile node flow comprising:

sending a flow **[interpreted by the examiner as IPv4 packet flow]** containing at least one packet **[IPv4 packet]** from a mobile node **[Fig. 1, IPv4/IPv6 mobile node 1806, col. 11, line 27]** to a second node **[Fig. 1, IPv6 mobile node 104]** along a first path **[Fig. 18, IPv4 node 1803 to IPv4 mobile agent 1805]**;

sending a first message **[movement transmission request message, col. 11, lines 27-30]** from the mobile node **[Fig. 1, IPv4/v6 mobile node 106, col. 11, line 27]** along a second path **[Fig. 1, movement, IPv4/v6 node 106 to new IPv4 mobile agent 108]** to the second node **[Fig. 1, IPv6 mobile node 104]**, the second path including one at least one node in the first path **[Fig. 1, IPv6 mobile node 104]**, and

sending a second message movement **[movement transmission request message, col. 11, lines 27-30]** from the mobile node **[Fig. 1, IPv4/v6 mobile node 106, col. 11, line 27]** to at least one of the second node and the one at least one node **[Fig. 1, IPv6 mobile node 104]**,

the second message triggering the sending of a third message from at least one of the second node and the one at least one node to the mobile node **[Fig. 5, step 54, where the network address of the IP mobile agent is compared to the post-movement network address in the movement status management table 119, col. 11, lines 47-53]**,

the second message triggering a mapping between a home address and a temporary address of the mobile node in each at least one node in the second path **[Fig. 5, step 70, IPv6 movement registration processing, col. 12, lines 11-13]**.

6. With regard to claims 4-6, 9-10, 24, 28, 31, 33, 41 Watanuki et al. discloses that each packet has a care of/destination address **[Fig. 14, foreign IPv4 address 1402]** in the source address field **[Fig. 14, home IPv4 address, 1403]** and home address option is in the header of the packet **[Fig. 14, IPv4 header, 1401]**.

7. With regard to claim 7, Watanuki et al. discloses that the first location comprises a first IP subnet **[Ipv4]** and the second location comprises a second IP subnet **[IPv6]**.

8. With regard to claim 8, Watanuki et al. discloses configuring a classification function **[Fig. 6, step 65, i.e., determining the IPv4 or IPv6 addresses and movement based on the movement status management table 119, col. 13, lines 53-59]** at each node **[Fig. 18, IPv4 mobile agent**

105, IPv6 mobile agent 107, and IPv4 mobile agent 108] to perform the classifying **[e.g., to determine IPv4 or IPv6 movement detection; see also col. 11, lines 24-42]**.

9. With regard to claim 19, Watanuki et al. discloses receiving a second message **[Fig. 6, step 64, movement registration permission message]**, propagating the second message to other routers if appropriate **[Fig. 18, to other mobile agents in both in Lan-a 1800 and Lan-d, 1801]** and releasing the reserved resources for the flow in response to the second message **[examine interprets the resources as inherently released when converting from IPv6 packets to the smaller IPv4 packets]**.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 11-13, 20, 26, 30, 40, 44, 46-47, 50-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanuki et al. as applied to claims 1-10, 18-19, 21-25, 27-29, 32, and 34-35 above, and further in view of RSVP Support for Mobile IP version 6 in wireless environments (Internet Engineering Task Force, November 1998) (RSVP SUPPORT).

12. With regard to claims 11-13, 20, 26, 30, 40, 44, 46-47, 50-53 Watanuki et al. does not specifically disclose that the node is a RSVP router. However, RSVP SUPPORT discloses the use of RSVP routers **[page 5, Section 2.1.2]**. Moreover, RSVP SUPPORT also discloses PATH and RESV messages **[page 2, Section 1.2.1]**. Watanuki et al. deals with IPv6 and routing of packets in the IPv6 and IPv4 environments. RSVP SUPPORT also deals with IPv6 support and routing of packets in the IPv6 and IPv4 environments. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use an RSVP router as the node in order to optimize routes using IPv6 and to prevent address mismatches between the flow IDs between the mobile node and RSVP router.

13. With respect to claim 42, Watanuki et al. does not specifically disclose that the first message comprises a binding update message. However, RSVP SUPPORT discloses this **[Section 2.1.7, page9, lines 23-24]**. Watanuki et al. deals with IPv6 and routing of packets in the IPv6 and IPv4 environments. RSVP SUPPORT also deals with IPv6 support and routing of packets in the IPv6 and IPv4 environments. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use an RSVP router as the node in order to optimize routes using IPv6 and to prevent address mismatches between the flow IDs between the mobile node and RSVP router.

14. With respect to claim 43, Watanuki does not specifically disclose that the second message comprises a CoA advertisement RSVP message. However, RSVP SUPPORT discloses this **[Section 2.1.6, page 8, lines 5-7]**. Watanuki et al. deals with IPv6 and routing of packets in the

IPv6 and IPv4 environments. RSVP SUPPORT also deals with IPv6 support and routing of packets in the IPv6 and IPv4 environments. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use an RSVP router as the node in order to optimize routes using IPv6 and to prevent address mismatches between the flow IDs between the mobile node and RSVP router.

15. With regard to claims 51-53, Watanuki et al. discloses that the second message contains a home address **[Fig. 14, home IPv4 address, 1403]** and a temporary address **[Fig. 14, foreign IPv4 address 1402]**, each node establishing a path and mapping between the home address and the temporary address if no path state for the flow has been established **[Fig. 5, step 70, IPv6 movement registration processing, col. 12, lines 11-13]** or updating the path state **[[Fig. 5, step 54, where the network address of the IP mobile agent is compared to the post-movement network address in the movement status management table 119, col. 11, lines 47-53]** if necessary **[Fig. 5, step 60]**, otherwise no change **[Fig. 5, step 55]**.

Allowable Subject Matter

16. Claims 14-17 and 48-49 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

17. The following is a statement of reasons for the indication of allowable subject matter:

The examiner has not found a method of routing packets during handoff when a mobile node moves from a second location to a third, sending a second configuration message from the

mobile node to the crossover node in the path, the second configuration message sent along a second path from the mobile node to the crossover node; sending a second confirmation message from the crossover node to the mobile node, the second confirmation message reserving resources in nodes in the second path for the flow from the mobile node; and sending the flow from the mobile node to the second node along the second path between the mobile node and the crossover node and the path between the crossover node and the second node.

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

(a) Liu (USP 5,825,759) Distributing network services and resources in a mobile communications network.

(b) Lioy (USP 6,665,537) Automatic Invocation of Mobile IP Registration in a Wireless Communication Network.

(c) Lee et al. (US Patent Publication 2002/0085517), Gatekeeper supporting handoff and handoff method in IP telephony system.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark A Mais whose telephone number is (571) 272-3138. The examiner can normally be reached on 8:00-4:30.

20. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on (703) 305-4366. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

21. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

March 18, 2005